

Blue

Work Order ID 81776

81776

March-19-12 1:18:54 PM

Item ID: D206-642-341

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Replacement Skidtube

Start Date: 19/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 18/05/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/03/19

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
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D2650	F
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100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels per PPP D206-642-341 CHG003

MLJ

N/A

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

0.00

110

Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Deburr Fwd edge of tube

2-Remove ridge on inside of Fwd edge of tubeas per Dwg D2650

3-Weld Fwd Cap as per Dwg D2650. Use aluminum rod. Grind D2647 to fit as required.

A/RAluminum Rod m120164

4-Grind weld flush to cap on top surface only.

5-Cut aft end to lenght as per dwg D2650

6-Drill pilot holes using drill Jig DT8168A (A,& B) and DT8025. Open to Ø0.312"

7-Drill holes for wearplates using DT 8028-5. Open to Ø 0.297".

8-Open Aft Cap Hole using #6 Drill Bit

9-Open holes for Tow Ring to Ø0.625" as per Dwg D2650, D2650-5 Drilling Detail

10-Remove inner indexing ridge on aft end of skidtubeas per Dwg D2650

11-Deburr and Blow out all chips form inside the tube

*Rm/12-4-13 / CF**30E12-04-16**De 12/04/18*

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QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
115	QC5- Inspect part completeness to step on W/O	0.00							
115									
QC	Memo	0.00		5/21/18					
Quality Control									
120	Chemical Conversion Coat per QSI005 4.1	0.00							
120									
HandFinish	Memo	0.00							
Hand Finishing									
125	QC7-Inspect Chemical Conversion Coat	0.00							
125									
QC	Memo	0.00							
Quality Control									

JLG 12-4-18

DP 12-4-18

W/O:		WORK ORDER CHANGES					
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Run Start ***NR1***

QC:

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SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

130

Skidtubes

0.00

Skidtubes

Memo

Skidtubes

1-Open holes to finished size as per Dwg D2650, D2650-5 Drilling Detail
(without cutting fluid)

2-Countersink crossbolt spacer holes as per Dwg D2650(without cutting fluid)

3-Deburr. Blow out chips. Grind alodine off around crossbolt spacer.

4-Bond D2654-5 web in place as per QSI 015Ensure holes line upAllow 12 Hrs.
cure time before cuttingStart Date: 12-4-18 Time: 16:30Finish Date: 12-04-19 Time: 9:30A/RSikaflex-291 m121221Sikaflex expiry date: 2013-1-4

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.00

Quality Control

CF 12-4-18

1 2 BE 12/04/19

Dart Aerospace Ltd

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Customer:

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

0.00

150

Skidtubes

Skidtubes

Memo

0.00

1-Prep per QSI 005 and Insert cross bolt spacers D2649. Weld as per QSI 004 and Dwg D2650. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod
A/RAluminum Rod M120164

2-Grind welds flush as per Dwg D2650. Masking Tape access to inside of the Skidtube

3-Counterbore 5/16" x 0.750" deep as per Dwg D2650Debur

4- Install nut plate as per dwg

170

QC10- Inspect visual per QSI004- ground welds

0.00

170

QC

Memo

0.00

Quality Control

Scalitz

12/04/19
BE
BE/KC 12-4-23

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Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

190

Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Brush alodine tube on crossbolt spacer area, do not acid etch, do not dip tube in tank.

195

Spray Painting per QSI005 4.2

0.00

195

SprayPaint

Memo

0.00

Spray Painting

PRIME B 117319
Delfleet BLUE B 121149
CLEAR Delfleet B 118093

RG 12-4-25

W 12' 24' 30" (1)

W/O:		WORK ORDER CHANGES					
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Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

205

QC14- Inspect Spray Paint

0.00


205

QC

Memo

0.00

Quality Control

 12-05-01

Dart Aerospace Ltd

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____


Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	HandFinishing	0.00							
220									
HandFinish									
Hand Finishing	Memo	0.00							
	1-Install inserts & wearpads as per dwg D2922. Use a drop of Sikaflex inside insert holes before installing wearpad/wearplate. A/RSikaflex-291 <u>119443</u> Sikaflex expiry date: <u>12/16</u>								
	2-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install plugs as per Dwg D2650. Clean excess adhesive								
	3-Install MS27039-4-06 Screw								
	4-Inspect for foreign object per QSI 024								
	5-Install D2646 Aft Cap and seal with SikaflexClean excess adhesive A/RSikaflex-291 <u>119443</u> Sikaflex expiry date: <u>12/16</u>								
	6-Wing Walk as per Dwg D2650-5 and QSI 005 4.4 Batch: <u>12112</u>								

PT03

12/05/01.

Dart Aerospace Ltd

W/O: 81776		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
12/05/01	220	Assemble w (2x) MS270391-08 / m121011 screws as per Drawing detail "E"		12/05/01	x2			

Part No: D206-642-341 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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81776

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Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	QC3- Inspect Part Finish	0.00							
230									
QC	Memo	0.00							
Quality Control									
240	QC5- Inspect part completeness to step on W/O	0.00							
240									
QC	Memo	0.00							
Quality Control									
250	Packaging	0.00							
250									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D206-642-341								
	Location: _____								
	PPP Rev: _____								

PPP 81783

SP
12-59

W/O:		WORK ORDER CHANGES					
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Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

QC21- Final Inspection - Work Order Release

0.00

260

QC

Memo

0.00

Quality Control

12/5/10

MF
12-05-09

Dart Aerospace Ltd

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- *March-19-12 1:18:58 PM*

81776

D206-642-341

Required Date: 18/05/2012

Required Qty: 1.00

Comments: IPP Rev: H05.10.11 Added D3429-1 per CHG004KJ/CP/JLM
IPP Rev: I 08-09-29 revF as per dwg DD verified by: EC Est Rev: J 09-03-02 as per DSI9440 rev.a DD verified by: EC IPP rev K 10.08.03 chg
ms27039-1-08 for "C" type EC verified by DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN960JD416 *AN960.ID416* Washer	NAS1149D0463J	Purchased	No				Each	14.0000		1			
					121255✓				**	1		2P 12/05/01	
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				ST351			14						
					116289		14						
CCR264SS3-3 *CCR264SS3-3* Cherry Rivet		Purchased	No				Each	603.0000					
									**			DP/CC 12-4-23	
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				ST331			603						
					113973		2						
					117849		125						
					119017		476						
CR3212-4-03 *CR3212-4-03* Cherry Rivet		Purchased	No				Each	1,460.000					
									**			4 DP/CC 12-4-23	
				<u>Location</u>			<u>Loc Qty</u>		<u>Loc Code</u>				
				FP002			470						
					114859		470						
				ST331			990						
					110139		2						
					119017		988						

Dart Aerospace Ltd

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Picklist Print

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Parent Item: D206-642-341

Parent Item Name: Replacement Skidtube

81776

D206-642-341

Start Date: 19/03/2012

Required Date: 18/05/2012

Start Qty: 1.00

Required Qty: 1.00

D2620

Manufactured No

Each 28.0000

1

D2620

**

Rm 12-4-13

Skidtube, 206 Skidtube

Location

Loc Qty

Loc Code

LG

82028

28

77999

1

79543

2

79544

2

79545

2

81365

11

81366

10

D2647

Manufactured No

Each 47.0000

1

D2647

**

BE2-0416

Cap

B79563-1

Location

Loc Qty

Loc Code

LG002

47

75482

47

W/O:		WORK ORDER CHANGES					
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D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 19/03/2012

Required Date: 18/05/2012

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

Each

1,431.000

19

D2649

Cross Bolt Spacer

**

BE 12/04/19
B79564 19

Location	Loc Qty	Loc Code
LG	974	
77574	2	
79502	403	
79503	399	
79504	14	
79565	156	
LG001	457	
65317	1	
68224	2	
68507	11	
71355	2	
72704	2	
72841	11	
73390	8	
73857	21	
73858	53	
73859	4	
73860	4	
78020	6	
78583	2	
79566	330	

D2654-5

Manufactured No

Each

14.0000

1

D2654-5

Web

**

① CF 12-4-18

B82129

Location	Loc Qty	Loc Code
LG	14	
80057	8	
81326	6	

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Shop Packet Print

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Dart Aerospace Ltd

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Parent Item Name: Replacement Skidtube

81776

D206-642-341

Start Date: 19/03/2012

Required Date: 18/05/2012

Start Qty: 1.00

Required Qty: 1.00

D2680-041

Manufactured No

Each

148.0000

D2680-041

Nut Plate

**

Handwritten: 12/CC 12-4-23

Location

Loc Qty

Loc Code

ST013

116

78016

116

ST019

32

76790

32

Each

1,594.000

56

MS27039C1-08

Purchased

No

MS27039C1-08

SCREW

**

Handwritten: 56 2P 12/05/01

Location

Loc Qty

Loc Code

FP002

1

116022

1

ST292

1500

120308

1000

121068

500

ST293

93

116373

3

118077

14

119309

76

220

Each

4,213.000

54

54

ALS4-1032-130

Purchased

No

AI S4-1032-130

Insert

**

Handwritten: 54 2P 12/05/01

Location

Loc Qty

Loc Code

ST280

283

119084

116

120671

167

ST281

3930

120807

1930

120837

2000

March-19-12 1:18:58 PM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 5

March-19-12 1:18:58 PM

Work Order ID: 81776

81776

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 19/03/2012

Required Date: 18/05/2012

Start Qty: 1.00

Required Qty: 1.00

AN960C10L

* NAS1149C0332 ✓ Purchased
R

No

12509 ✓

220

Each

0.0000

54

54

*AN960C10I *

washer

**

54

OP

12/05/01

AN960JD10L

* NAS1149D0332 ✓ Purchased

No

120644 ✓

220

Each

0.0000

2

2

*AN960.ID10I *

Washer

**

2

OP

12/05/01

D2646

Manufactured

No

220

Each

125.0000

1

1

D2646

Aft Cap

**

1

OP

12/05/01

Location

Loc Qty

Loc Code

FP002

125

62678

5

68280

5

70945

1

71070

2

73294

1

73825

2

78018 ✓

26

79500

33

79562

50

March-19-12 1:18:58 PM

Shop Packet Print

Page 5

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 1:18:58 PM

Work Order ID: 81776

81776

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 19/03/2012

Required Date: 18/05/2012

Start Qty: 1.00

Required Qty: 1.00

D2651-1

Manufactured No

220 Each

551.0000 14 14

D2651-1

Plug

**

14

(2P)

12/05/01

Location

Loc Qty

Loc Code

FP001

827

57869

1

66445

10

69018

2

70827

2

70839

8

71037

8

77559

30

78584

188

79234 ✓

278

FP-A

-276

77559

1

78124

23

D2651-3

Manufactured No

220 Each

1,888.000 14 14

D2651-3

O-Ring

**

14

(2P)

12/05/01

Location

Loc Qty

Loc Code

FP001

16

61962

12

73828

4

FP-A

1872

78126 ✓

1872

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-19-12 1:18:58 PM

Work Order ID: 81776

81776

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 19/03/2012

Required Date: 18/05/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-11

Manufactured No

220

Each

21.0000

1

1

D3535-11

Wearshoe

**

(SP)

12/05/01

Location

Loc Qty

Loc Code

FP001

82153 ✓

21

71284

6

79058

15

D3535-23

Manufactured No

220

Each

35.0000

1

1

D3535-23

Wearshoe

**

1 (SP)

12/05/01

Location

Loc Qty

Loc Code

FP001

81355 ✓

35

73314

6

74508

11

80330

18

D3535-35

Manufactured No

220

Each

32.0000

1

1

D3535-35

Wearshoe

**

1 (SP)

12/05/01

Location

Loc Qty

Loc Code

FP001

82064 ✓

32

67598

1

70815

1

78873

13

79849

1

80332

16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 8

March-19-12 1:18:58 PM

Work Order ID: 81776

81776

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 19/03/2012

Required Date: 18/05/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-11

Manufactured No

220

Each

28.0000

1

1

D3536-11

Gasket

**

1

OP

12/05/01

Location

Loc Qty

Loc Code

FP002

28

46649

1

46715

4

65574

1

80006 ✓

22

D3536-23

Manufactured No

220

Each

42.0000

1

1

D3536-23

Gasket

**

1

OP

12/05/01

Location

Loc Qty

Loc Code

FP002

42

43406

1

73312

3

74510

12

80334 ✓

26

D3536-35

Manufactured No

220

Each

32.0000

1

1

D3536-35

Gasket

**

1

OP

12/05/01

Location

Loc Qty

Loc Code

FP002

32

74511

5

80335

27

March-19-12 1:18:58 PM

Shop Packet Print

Page 8

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 9

March-19-12 1:18:58 PM

Work Order ID: 81776

81776

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 19/03/2012

Required Date: 18/05/2012

Start Qty: 1.00

Required Qty: 1.00

D3537-1 Manufactured No

220 Each

165.0000 6 6

D3537-1

Wearpad

**

6

(28)

12/05/01
12/05/01

Location Loc Qty Loc Code

FP001 83255 ✓ 104

79833 50

79835 54

FP002 61

69817 5

79834 14

80336 42

D3537-3 Manufactured No

220 Each

14.0000 1 1

D3537-3

Wearpad

**

1

(28)

12/05/01

Location Loc Qty Loc Code

FP002 81363 ✓ 14

74500 9

76986 5

MS27039-4-06 Purchased No

220 Each

185.0000 1 1

MS27039-4-06

Screw

**

1

(28)

12/05/01

Location Loc Qty Loc Code

ST292 185

119075 ✓ 185

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -1	QTY -3	QTY -5	QTY -7	PART NUMBER	DESCRIPTION
X				D2650-1	SKIDTUBE ASSEMBLY
	X			D2650-3	SKIDTUBE ASSEMBLY
		X		D2650-5	SKIDTUBE ASSEMBLY
			X	D2650-7	SKIDTUBE ASSEMBLY
1	1	1	1	D2600-1-160	EXTRUSION
1				D2654-1	WEB
	1			D2654-3	WEB
		1		D2654-5	WEB
			1	D2654-7	WEB
1	1	1	1	D2646	AFT CAP
1	1	1	1	D2647	CAP
17	18	19	23	D2649	CROSS BOLT SPACER
16	18	14	22	D2651-1	PLUG
16	18	14	22	D2651-3	O-RING
1	1	1	1	D2680-041	NUT PLATE
2	2			D3286-1	DOUBLER
2	2			D3286-3	STUD
42	44	54	60	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, ALS7-1032-130)
2	2	2	2	AN960JD10L	WASHER
2	2	2	2	CCR264SS3-3	RIVET
2	2	2	2	CR3212-4-03	RIVET
2	2	2	2	MS27039-1-08	SCREW
1	1	1	1	MS27039-4-06	SCREW
1	1	1	1	AN960JD416	WASHER
52	52			CR3212-4-04	RIVET

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE
WORK ORDER

NO. 81776 MJS
12/03/19

RELEASED
08-07-23-17

F	DRAWING UPDATED TO CURRENT STANDARDS. SHT 6 ADDED. ALL SECTION AND DETAIL VIEWS TRANSFERRED TO SHT 6. SHT 1 IN PL PART D2649 QTY UPDATED. SHT 6 SECT C-C GRIND INSTRUCTIONS DELETED FROM NOTE 7 (SEE NCR 239).	AJS	08.08.08
E	RMOVE CBORE, CHG DRILL, ADD CHAMFER	CP	06.03.30
D	REDRAW: INCCRP. DE09136/9153/9163 MOD GROUND HANDLING ON D2650-1/-3	CP	04.05.17
C	CHANGE HOLE PATTERN AND FRONT END	DS	97.10.29
B	AS MANUFACTURED CHANGES	DS	97.06.26
A	NEW ISSUE	DS	97.03.25
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE USA, INC PORT HADLOCK, WA	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 1 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
-BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 11) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)
- 12) DRILL Ø0.297 FOR ALS7-1032-130 INSERTS USING TEMPLATE DT8056-1 ON -1 TUBE, DT8056-3 ON -3 TUBE, DT8056-5 ON -5 TUBE, AND DT8056-7 ON -7 TUBE. INSTALL INSERTS AFTER FINISH.
- 13) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

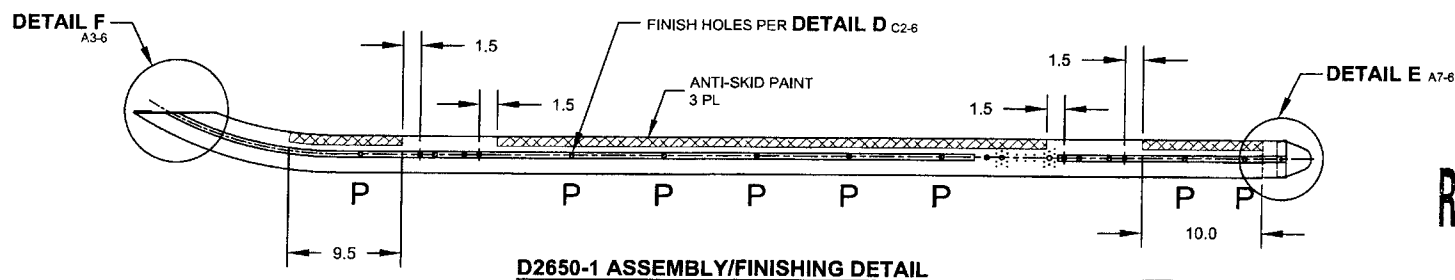
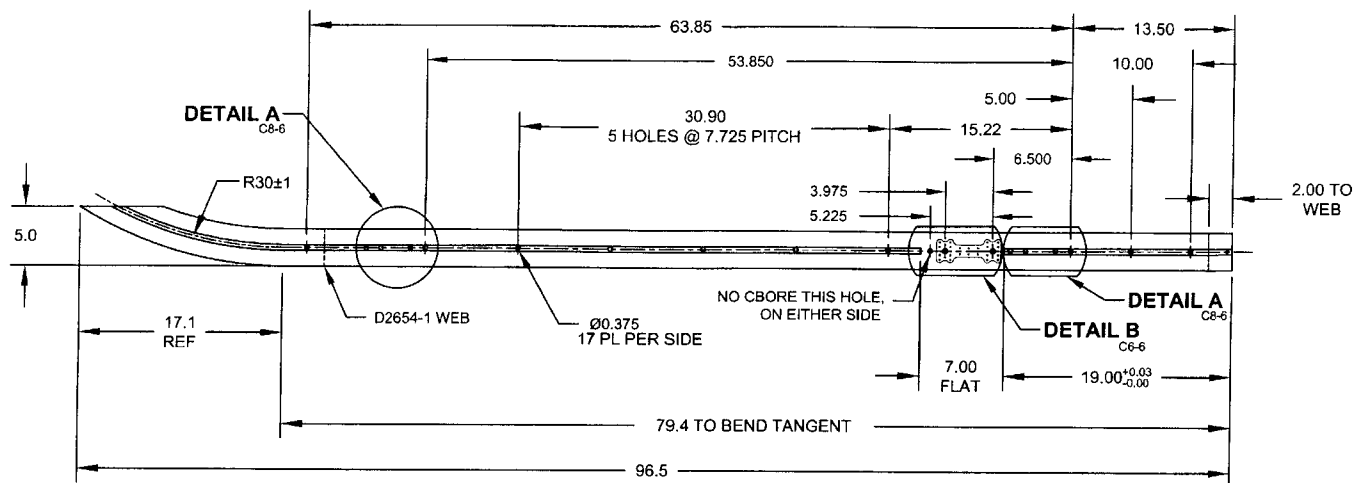
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



RELEASED
680922/107

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 2 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	<small>COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

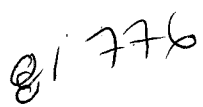
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DETAIL F
A3-6

1.5
1.5
1.5
1.5
1.5
1.5
1.5
1.5

FINISH HOLES PER **DETAIL D** C2-6

ANTI-SKID PAINT
3 PL

P P P P P P P P

15.5

12.0

DETAIL E
A7-6

RECO

RELEASED
08 07 22 1118

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.	<i>[Signature]</i>	D2650	SHEET 3 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	206/407 SKIDTUBE ASSEMBLIES	NTS
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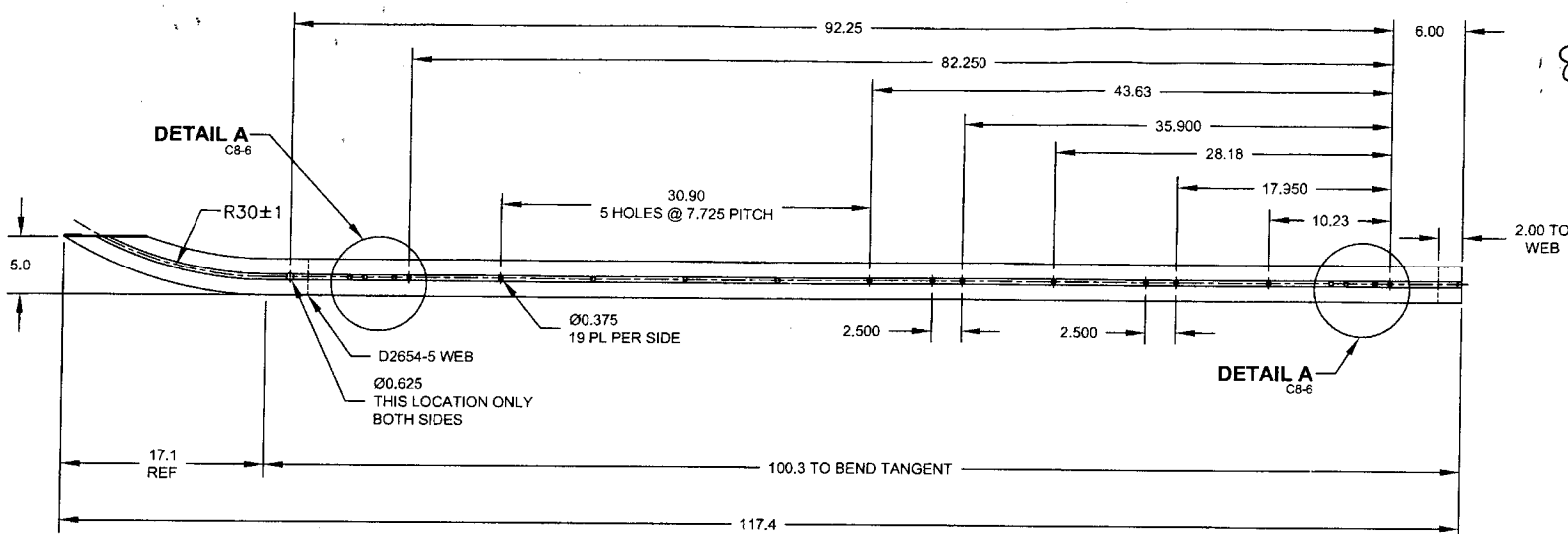
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

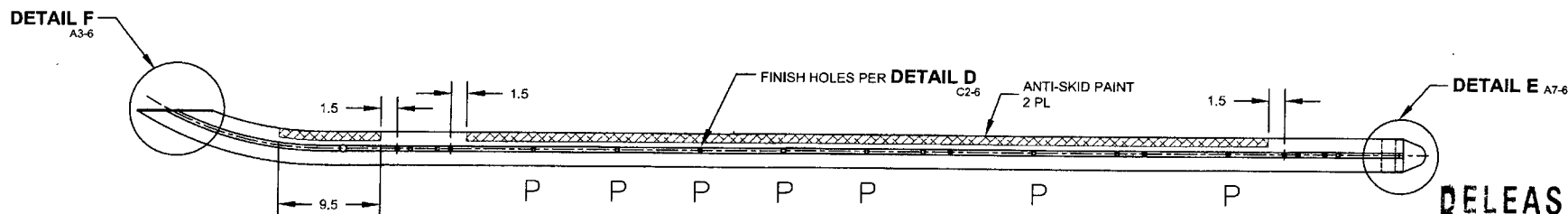
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2650-5 BENDING/DRILLING DETAIL



D2650-5 ASSEMBLY/FINISHING DETAIL

DESIGN	DS	DART AEROSPACE USA, INC	
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CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 4 OF 6
APPROVED		TITLE	SCALE
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Dart Aerospace Ltd

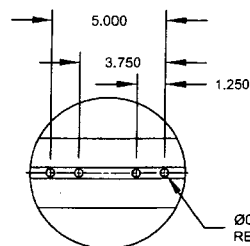
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

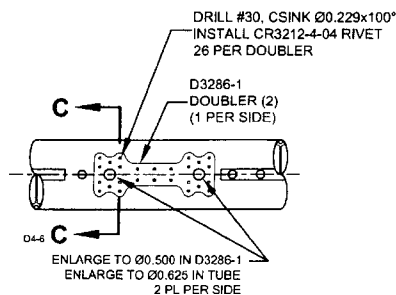
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

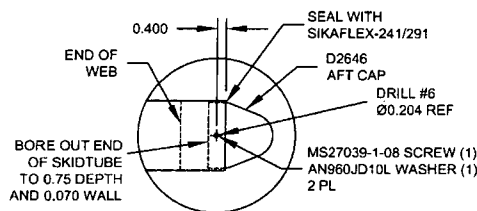
NOTE: Date & initial all entries



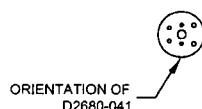
DETAIL A
SCALE 2X
C2-2
D7-2
C2-3
D7-3
C2-4
D7-4
C2-5
D8-5



DETAIL B
SCALE 2X
C3-2
C3-3

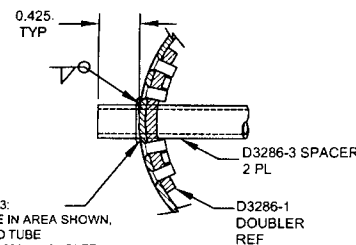


DETAIL E
SCALE 2X
B2-2
B2-3
B1-4
B1-5

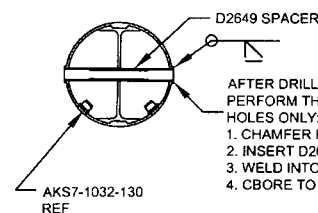


DETAIL F
SCALE NONE
B8-2
B8-3
B8-4
B8-5

SECTION C-C C7-6
SCALE NONE



- TO INSTALL D3286-1/3:
1. GRIND OFF FLANGE IN AREA SHOWN, FLUSH WITH ROUND TUBE
 2. LOCATE & DRILL D3286-1 DOUBLER USING DT3286-1T1
 3. ENLARGE HOLES IN D3286-1 TO Ø0.500
 4. ENLARGE HOLES IN TUBE TO Ø0.625 AND CHAMFER HOLE 0.030x45°
 5. RIVET D3286-1 TO TUBE
 6. INSERT D3286-3 SPACER
 7. WELD IN PLACE.



DETAIL D
FOR Ø0.375 HOLES ONLY
SCALE 3X
B4-2
B4-3
B4-4
B4-5

DETAIL F NOTES:

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D2647 (TRIM AS NECESSARY)
4. WELD D2647 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D2680-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D2680-041 PRIOR TO FINISH

RELEASED
65-09-22-18

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 6 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	<small>COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 290

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 80956
Part number: 1206-642-151
Description: Skid tube
Welding Process: Tig ☒ Mig ☐
Base material: Alum.
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier David Kessel Date of Test Coupon 12.04.18
Welder Barclay Elliott Date of Test Coupon 12.04.18

The above named individual is qualified in accordance with AWS D17.1.2001 to weld